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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,764	03/25/2004	George E. Richards	1925A1	7933

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PPG INDUSTRIES, INC.
Intellectual Property Department
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EXAMINER	
WOLLSCHLAGER, JEFFREY MICHAEL	
ART UNIT	PAPER NUMBER
1732	

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/809,764	RICHARDS ET AL.	
	Examiner	Art Unit	
	Jeff Wollschlager	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) *12,16 and 20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,13-15,17-19 and 21-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/23/04; 8/24/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-11, 13-15, 17-19, and 21-24, drawn to a method for forming a thermosetting powder coating composition, classified in class 264, subclass 141.

II. Claims 12, 16, and 20, drawn to a thermosetting powder coating composition, classified in class 525, subclass 934.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product can be made by another materially different process such as reacting and blending the ingredients in an agitated reactor vessel.

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mrs. Diane Meyers on May 3, 2006 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-11, 13-15, 17-19, and 21-24. Affirmation of this election must be made by

applicant in replying to this Office action. Claims 12, 16, and 20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 is indefinite because the claim states the hard to incorporate additive(s) are added at the initial position (i.e. the position the base material is added) while claim 1, states that the hard to incorporate additive(s) are added to the base material in the extruder after the initial position. Dependent claim 4, as written, does not effectively eliminate the requirement to add the hard to incorporate additive after the base material enters the extruder, as stated in independent claim 1. For the purposes of examination, claim 4 is interpreted to mean the hard to incorporate additive(s) are added at the initial position and are therefore not added after the base material enters the extruder. This

interpretation is supported by paragraph [0012] in the specification for this application (U.S. Patent Application Publication 2005/0212159).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Koike et al. (European Patent Application EP 1 253 174, published October 30, 2002).

Regarding claim 1, Koike et al. (hereafter Koike) teach a process for manufacturing thermosetting powder coating compositions (Abstract) comprising: A) feeding a base material/polyester resin to an extruder from an initial position (paragraph [0013, lines 25-27]; Figures 1-4); B) adding at least one hard to incorporate additive (e.g. pigments, flow adjustment agents, etc.) to the base material after the base material enters the extruder and before it exits the extruder (paragraph [0019]; paragraph [0054]; paragraph [0072]; Figures 1-3); and C) passing the combined base material and hard to incorporate additives(s) through at least a portion of the extruder to form a thermosetting powder coating composition (Abstract, Figures 1-3).

As to claim 2, Koike teaches monitoring the output from the extruder to achieve predetermined functions in the product and dynamically adjusting, as needed, the amount of hard to incorporate additive added to the extruder in step B) to dynamically

control the manufactured thermosetting powder coating based upon the monitored output (paragraph [0039]). These adjustments are made in the continuous/dynamic process by employing the inherent capabilities of the metering feeders and metering pumps (paragraph [0058]).

As to claim 3, Koike teaches the base material travels through a portion of the extruder before the addition of the addition of the hard to incorporate additive(s) in step B) (Figures 1-3,paragraph [0072]; paragraph [0054]).

As to claim 4, Koike teaches the hard to incorporate additives are introduced to the extruder at the initial position with the base material (Figures 1-3; paragraph [0072]; paragraph [0054]).

As to claim 5, Koike teaches the process is repeated for different thermosetting powder coatings wherein the different thermosetting powder coatings utilize a common base material (See Examples 1-6 and paragraph [0072]).

As to claim 6, Koike teaches the hard to incorporate additive comprises pigment(s). (paragraph [0019]).

As to claim 7, Koike teaches the hard to incorporate additive comprises pigments dispersed in a liquid pigment dispersion (paragraph [0051, lines 45-46]; paragraph [0072]).

As to claim 9, Koike teaches the hard to incorporate additive comprises flow additives/fluidity adjusting agents (paragraph [0019]).

As to claim 10, Koike teaches the addition of the hard to incorporate additive is introduced by injection with a metering pump (paragraph [0058]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koike et al. (European Patent Application EP 1 253 174, published October 30, 2002).

As to claim 11, Koike teaches the method of claim 10 as discussed in the 102(b) rejection above. Koike further teaches supplying the additives and solvents from hoppers with the use of flow meters/flow regulator and metering pumps (paragraph [0058]). Further, the hopper taught by Koike is intrinsically coupled to a pressure source, whether the pressure source is pressure from the open atmosphere or another source, if the hopper is going to be operative. Without a pressure source, the hopper

would collapse under the vacuum created during the transfer of material out of the tank. Koike does not teach that the hopper is a low pressure vessel, nor does he expressly state the hopper has a mechanism for maintaining the pressure in the vessel less than 100 psi.

However, it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the claimed invention to employ a low pressure vessel as the hopper and to maintain the pressure in the vessel at a pressure less than 100 psi for the purposes of minimizing capital costs, minimizing plant utility costs (e.g. nitrogen), and to meet environmental requirements to minimize vapor emissions. It is further noted that the structural limitations of claim 11, appear to have little impact on the practice of the claimed method. The claimed invention is rendered obvious over the teaching of the prior art.

Claims 8, 13-15, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koike et al. (European Patent Application EP 1 253 174, published October 30, 2002) in view of Jaffe et al. (U.S. Patent 5,856,508; issued January 5, 1999).

As to claim 8, Koike teaches the method of claim 1 as discussed in the 102(b) rejection above, but does explicitly teach that the hard to incorporate additive comprises pigment(s) dispersed in a dried liquid pigment dispersion (according to the definition of the phrase in the instant specification). Koike does teach that different pigments may

be employed in his method of producing a powder coating (paragraph [0038]), but does not discuss the specific method by which the pigment additive itself is produced.

However, Jaffe et al. teach a pigment with a particle size in the range from 0.5 to 4.0 micrometers with an unusual combination of light emission and outdoor durability (col. 2, lines 1-6) that is provided in dried form after being produced with an organic solvent (Example II).

Therefore it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the claimed invention to employ the pigment taught by Jaffe et al. as a pigment/additive in the method taught by Koike for the purpose, as taught by Jaffe et al. of providing a powder coating with superior outdoor durability (col. 2, lines 1-25). As such, the claimed invention is rendered obvious over the combined teaching of the prior art.

Regarding claim 13, Koike teaches a process for manufacturing thermosetting powder coating compositions (Abstract) comprising: A) feeding a base material/polyester resin to an extruder from an initial position (paragraph [0013, lines 25-27]; Figures 1-4), adding pigment to the base material after the base material enters the extruder and before it exits the extruder (paragraph [0019]; paragraph [0054]; paragraph [0072]; Figures 1-3); and C) passing the combined base material and hard to incorporate additives(s) through at least a portion of the extruder to form a thermosetting powder coating composition (Abstract, Figures 1-3). Koike further teaches the pigment in step B) is either added separately or with the base material (Figures 1-3, paragraph [0072]; paragraph [0054]).

Koike does not teach that the pigment is a hyperdispersed pigment nor does he teach the hyperdispersed pigment is in the form of a dried liquid pigment dispersion that has been formed from a liquid pigment dispersion comprising greater than 5 weight percent organic solvent. It is noted that applicant defines a hyperdispersed pigment as a pigment having an average particle size of two microns or less.

However, Jaffe et al. teach a pigment with an overlapping particle size in the range from 0.5 to 4.0 micrometers/microns with an unusual combination of light emission and outdoor durability (col. 2, lines 1-6) that is provided in dried form after being produced with an organic solvent comprising greater than 5 weight percent organic solvent (Example II).

Therefore it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the claimed invention to employ the pigment taught by Jaffe et al. as a pigment/additive in the method taught by Koike for the purpose, as taught by Jaffe et al. of providing a powder coating with superior outdoor durability (col. 2, lines 1-25). As such, the claimed invention is rendered obvious over the combined teaching of the prior art.

As to claim 14, Koike teaches monitoring the output from the extruder to achieve predetermined functions in the product and dynamically adjusting, as needed, the amount of hard to incorporate additive added to the extruder in step B) to dynamically control the manufactured thermosetting powder coating based upon the monitored output (paragraph [0039]). These adjustments are made in the continuous/dynamic

process by employing the inherent capabilities of the metering feeders and metering pumps (paragraph [0058]).

As to claim 15, Koike teaches the process is repeated for different thermosetting powder coatings wherein the different thermosetting powder coatings utilize a common base material (See Examples 1-6 and paragraph [0072]).

As to claim 21, Koike teaches the addition of the hard to incorporate additive is introduced by injection with a metering pump (paragraph [0058]).

As to claim 22, Koike teaches the method of claim 21 as discussed in the 103(a) rejection above. Koike further teaches supplying the additives and solvents from hoppers with the use of flow meters/flow regulator and metering pumps (paragraph [0058]). Further, the hopper taught by Koike is intrinsically coupled to a pressure source, whether the pressure source is pressure from the open atmosphere or another source, if the hopper is going to be operative. Without a pressure source, the hopper would collapse under the vacuum created during the transfer of material out of the tank. Koike does not teach that the hopper is a low pressure vessel, nor does he expressly state the hopper has a mechanism for maintaining the pressure in the vessel less than 100 psi.

However, it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the claimed invention to employ a low pressure vessel as the hopper and to maintain the pressure in the vessel at a pressure less than 100 psi for the purposes of minimizing capital costs, minimizing plant utility costs (e.g. nitrogen), and to meet environmental requirements to minimize vapor emissions. It is further noted that the

structural limitations of claim 22, appear to have little impact on the practice of the claimed method. The claimed invention is rendered obvious over the combined teaching of the prior art.

Claims 17-19, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koike et al. (European Patent Application EP 1253174, published October 30, 2002) in view of Jaffe et al. (U.S. Patent 5,856,508; issued January 5, 1999) and further in view of Chang et al. (U.S. Patent 4,973,439; issued November 27, 1990).

Regarding claim 17, Koike teaches a method of producing thermosetting powder coating compositions in an extrusion process comprising: A) determining the amount of pigment to be added to the base material introduced to an extruder to form a thermosetting powder of a desired color, (paragraph [0039]); B) adding the determined amount of pigment through employment of metering feeders and metering pumps (paragraph [0058]); C) monitoring the output of the extruder for achieving the desired product properties (paragraph [0039]), and D) adjusting, as necessary, the amount of pigment added at step B) (paragraph [0058]; paragraph [0039]).

Koike does not teach that the pigment is a hyperdispersed pigment nor does he teach the hyperdispersed pigment is in the form of a dried liquid pigment dispersion that has been formed from a liquid pigment dispersion comprising greater than 5 weight percent organic solvent. It is noted that applicant defines a hyperdispersed pigment as a pigment having an average particle size of two microns or less.

However, Jaffe et al. teaches a pigment with an overlapping particle size in the range from 0.5 to 4.0 micrometers/microns with an unusual combination of light emission and outdoor durability (col. 2, lines 1-6) that is provided in dried form after being produced with an organic solvent comprising greater than 5 weight percent organic solvent (Example II).

Therefore it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the claimed invention to employ the pigment taught by Jaffe et al. as a pigment/additive in the method taught by Koike for the purpose, as taught by Jaffe et al. of providing a powder coating with superior outdoor durability (col. 2, lines 1-25). As such, the claimed invention is rendered obvious over the combined teaching of the prior art.

Additionally, Koike is somewhat vague regarding the specifics of controlling the quality of his product. The obvious reason is that dynamic process control is notoriously well-known in the art. Specific delineation of the details regarding an analogous method of process control is provided by Chang et al. (col. 1, lines 1-14; col. 4, lines 52-67; col. 5, lines 44-60).

Therefore it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the claimed invention to employ the equipment (metering feeders, metering pumps, etc.) and continuous processing taught by Koike in a manner specifically delineated by Chang et al. for the purpose of creating a high quality product.

As to claim 18, Koike teaches the process is repeated for different thermosetting powder coatings wherein the different thermosetting powder coatings utilize a common base material (See Examples 1-6 and paragraph [0072]).

As to claim 19, Koike teaches the hard to incorporate additive comprises pigments dispersed in a liquid pigment dispersion (paragraph [0051, lines 45-46]; paragraph [0057]; paragraph [0072]).

As to claim 23, Koike teaches the addition of the hard to incorporate additive is introduced by injection with a metering pump (paragraph [0058]).

As to claim 24, Koike teaches the method of claim 21 as discussed in the 103(a) rejection above. Koike further teaches supplying the additives and solvents from hoppers with the use of flow meters/flow regulator and metering pumps (paragraph [0058]). Further, the hopper taught by Koike is intrinsically coupled to a pressure source, whether the pressure source is pressure from the open atmosphere or another source, if the hopper is going to be operative. Without a pressure source, the hopper will collapse under the vacuum created during the transfer of material out of the tank. Koike does not teach that the hopper is a low pressure vessel, nor does he expressly state the hopper has a mechanism for maintaining the pressure in the vessel less than 100 psi.

However, it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the claimed invention to employ a low pressure vessel as the hopper and to maintain the pressure in the vessel at a pressure less than 100 psi for the purposes of minimizing capital costs, minimizing plant utility costs (e.g. nitrogen), and to meet

environmental requirements to minimize vapor emissions. It is further noted that the structural limitations of claim 24, appear to have little impact on the practice of the claimed method. The claimed invention is rendered obvious over the combined teaching of the prior art.

Conclusion

All claims are rejected.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Application Publication 2003/0125417 (Vanier et al.) teach that pigment colorant particles with particle sizes on the order of 0.5 microns are conventional in powder coating applications (paragraphs [0004, and 0028]) and further teach a process of using nanoparticle pigments to form coatings.

U.S. Patent 5,750,909 (Hawkins et al.) teach a method and apparatus for a feedback control system for the preparation of a mixture of resin.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-8937. The examiner can normally be reached on Monday - Thursday 7:00 - 4:45, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JW

Jeff Wollschlager
Examiner
Art Unit 1732

May 12, 2006

CHRISTINA JOHNSON
PRIMARY EXAMINER
5/15/06